I claim as my invention:

1. A method and apparatus for washing contaminants from very-fine-grained soil particles comprising the steps of:

Pumping a first high-velocity, high-kinetic-energy stream of wash fluid through a first nozzle at a velocity greater than 500 feet per second at a downward angle of approximately ten degrees from one end of said washing apparatus;

simultaneously pumping a second high-velocity, high-kinetic-energy stream of wash fluid through a second nozzle at a velocity greater than 500 feet per second at a downward angle of approximately ten degrees from the opposite end of said washing apparatus;

flowing two streams of low-velocity, low-kinetic-energy contaminated slurry into the path of each of said first and said second streams of high-velocity, high-kinetic-energy wash fluid thereby causing washing step number one;

said first and second streams of combined high-velocity, high-kinetic-energy wash fluid and low-velocity, low-kinetic-energy contaminated slurry constitute two streams of admixture continuing down separate opposing passages sloping at approximately ten degrees from each end of said apparatus;

said streams of admixture are each moving at a velocity of approximately 600 feet per second;

said high-velocity, high-kinetic-energy streams of admixture enter a faceted wash chamber midway within said soil-washing apparatus;

upon said streams of admixture entering said faceted wash chamber said streams merge in high-velocity, high-kinetic-energy contact with admixture previously injected into said washing chamber within a confined, turbulent environment thereby causing washing stage number two;

said two streams of admixture continue on into said faceted washing chamber from opposite ends of said washing apparatus at a velocity relative to each other of approximately 1200 feet per second to intersect in high-shear, high-kinetic-energy washing-phase number three;

upon intersecting each other said high-velocity, high-kinetic-energy streams of admixture deflect each other in a generally downward direction at high-velocities to contact said faceted inner surfaces of said washing chamber;

whereupon said admixture undergoes turbulent, high-shear, high-velocity washing stage number 4;

said admixture is then deflected from said washing-chamber faceted surfaces in generally

upward directions to;

intersect said high-velocity admixture entering said washing chamber from said primary passages thereby completing the fifth of a total of five washing stages in a high-shear environment of confined turbulence;

said admixture, now virtually devoid of kinetic energy, exits said washing chamber at a relatively low-velocity and a low-level of kinetic energy;

all interactions between said high-velocity fluid streams, slurry streams, admixture streams, and faceted wash-chamber surfaces are intended, by design, to remove resistant contaminants from fine-grained soil particles.

2. An apparatus for cleaning resistant chemical, metallic, hydrocarbon, and radioactive contaminants from very-fine-grained soil particles, said apparatus comprising:

a means for pumping very-high-velocity, high-kinetic-energy wash fluid from a storage tank through a first nozzle into a first primary passage within one end of a metallic rectangular, soil-washing apparatus consisting of two mirror-image matching halves joined securely together;

by pumping said wash fluid through a second of said nozzles into a second primary passage opposite said first primary passage within said washing apparatus;

said primary passages each having two secondary passages intersecting each of said primary passages;

said secondary passages positioned with one each of said secondary passages intersecting each of said primary passages at an angle of 90 degrees from the top of said primary passage;

and with one each of said secondary passages intersecting each of said primary passages at an angle of 90 degrees from the bottom of said primary passage;

each of said primary passages sloping downward at an angle of approximately ten degrees into a multifaceted washing chamber centralized within said washing apparatus;

said primary streams of said high-velocity, high-kinetic-energy wash fluid intersecting said streams of contaminated slurry flowing from a slurry tank through said secondary passages into the paths of said high-velocity streams of primary wash fluid;

thereby forming two streams of admixture which said high-velocity primary streams of wash fluid accelerate and carry along said primary passages into said multifaceted wash chamber;

said high-velocity streams of said admixture entering said multifaceted wash chamber from opposite ends of said apparatus meet in high-shear interaction at the center of said multifaceted

wash chamber;

as a result of said downward slope of each of said streams of admixture said streams of admixture deflect each other in a generally downward direction to impact, at high-velocity, upon said multifaceted surfaces of the bottom of said multifaceted wash chamber;

said multifaceted surfaces of said wash chamber cause high-velocity, high-shear deflection of said admixture in a generally upward direction;

said deflection carries said high-velocity admixture into the paths of said streams of admixture entering said wash chamber from said opposing primary passages;

said admixture now continues into and out through a single exit opening in the top of said multifaceted wash chamber;

said admixture has now depleted virtually all of its kinetic energy in said series of five defined soil-washing interactions;

said admixture now continues via commercial conduit into a system of commercially available equipment to separate said liquids from said solids;

to rinse said solids;

to neutralized said wash fluid;

to dispose of said decontaminated soils;

and to recycle said wash fluid for reuse.

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